

The Benefits of Intensive Sampling

Recently, an article published by Michigan Farm News highlighted the success of a farmer from Charlotte, Michigan (link at the end). Don Stall was recognized as the winner of the nationwide NCGA corn yield contest for irrigated corn, reporting an astounding 477.7 bushels per acre. While this is impressive in itself, it stands out even more that the county average where Stall farms is only 165 bushels per acre. According to Stall, the answer is straightforward: A good team, and more intensive farming based on more intensive sampling.

Speaking of his seed and agronomy teams, Stall says “They help me get the right product on the right acre. We use a lot of their test plots and our local test plots to determine which varieties work best for us. Other than that, it’s just attention to detail. Agronomy is a big issue, of course. We want the availability of nutrients there when the crop needs it.”

“From there, we just water and tissue test, and we adjust as tissue tests show us that we need to.”

Why is tissue testing so important for high-yielding crops? Most simply, because it allows you to monitor your crop’s nutritional needs in real-time. All plants require a steady supply of all nutrients in order to grow optimally. If a plant is ever deficient in any one essential nutrient, it is unable to grow to its potential genetic ability until the supply of that nutrient resumes. In the case of row crops such as corn, this flow of nutrients also helps the plant produce higher yields. Therefore, anytime that flow of essential nutrients is disrupted, even for a week or two, it’s impossible for a corn plant to maximize its genetic potential. Yield will always be lost.

Plants won’t always show when they are starting to become deficient in nutrients. Deficiency symptoms typically don’t start to appear until a nutrient is very low, at which point you’ve potentially lost a lot of yield. Tissue testing may be the only way to tell when a deficiency is beginning, allowing you the opportunity in most cases to do something about it.

“To get to 477 (bushels per acre), it’s not easy,” Stall said. “It’s a lot of work. We got to farm the crop the entire season. We don’t plant it, feed it and forget it until harvest; I mean, we farm it throughout the summer.”

Application of additional fertilizer, whether applied sidedress or through irrigation, can prevent your crop from falling below that critical level into lost-yield territory. In many cases, foliar applications of nutrients are helpful, particularly for micronutrient deficiencies.

But what about preparing your soil for the season ahead of time? Stall has an answer for that, too.

“We do a lot of variable-rate application of fertilizer,” he said. “Everything is grid sampled. Our irrigated (crop) is grid sampled every year, (and) our non-irrigated (crop) is grid sampled every two years. (With) irrigated, we sample at 1-acre grids, and we apply it that way because our soils are so variable here.”

Making sure your soil’s fertility is adequate before planting is the most important step you can take. Grid sampling helps you define and correct areas of the field that are out of balance, giving you a much

more consistent yield across all your acres. It can also help make in-season deficiencies fewer or less severe, allowing for an easier corrective action and lower potential for yield loss. As Stall eludes to, soil variability can be dramatic in many cases, so frequency of sampling needs to be adequate to keep up with any potential changes. It's likely that the typical 3- or 4-year sampling rotation is not nearly frequent enough in many cases.

Our Waypoint Agronomy Team makes these suggestions as we speak to different growers and agronomists across the country. We hear many success stories of how more intensive farming practices, including much more intensive soil and tissue sampling, have proven successful. All agree that more information is better than less.

While it's true that this change can take some practice, I suggest making a few changes each year. For example, go from a 4-year soil sampling rotation to sampling every 2 years. Start taking tissue samples on a few fields 3 or 4 times a season. It may take some time, but in short order you'll start to learn the patterns and trends of nutrient fluctuation in your fields. From there, increase the intensity a bit each year. After all, Stall has been trying for these record yields since 2003. While this year may be his first win, I'm sure he has gradually increased his yields, and therefore his ROI, each year since.

Talk to your agronomist or crop fertility specialist to form a plan that's right for your farm. The full article on Don Stall's success can be found at below, and is definitely worth the read.

<https://www.michfb.com/MI/Farm-News/Charlotte-farmer-surprised-to-set-the-highest-yield-in-NCGA-contest/>